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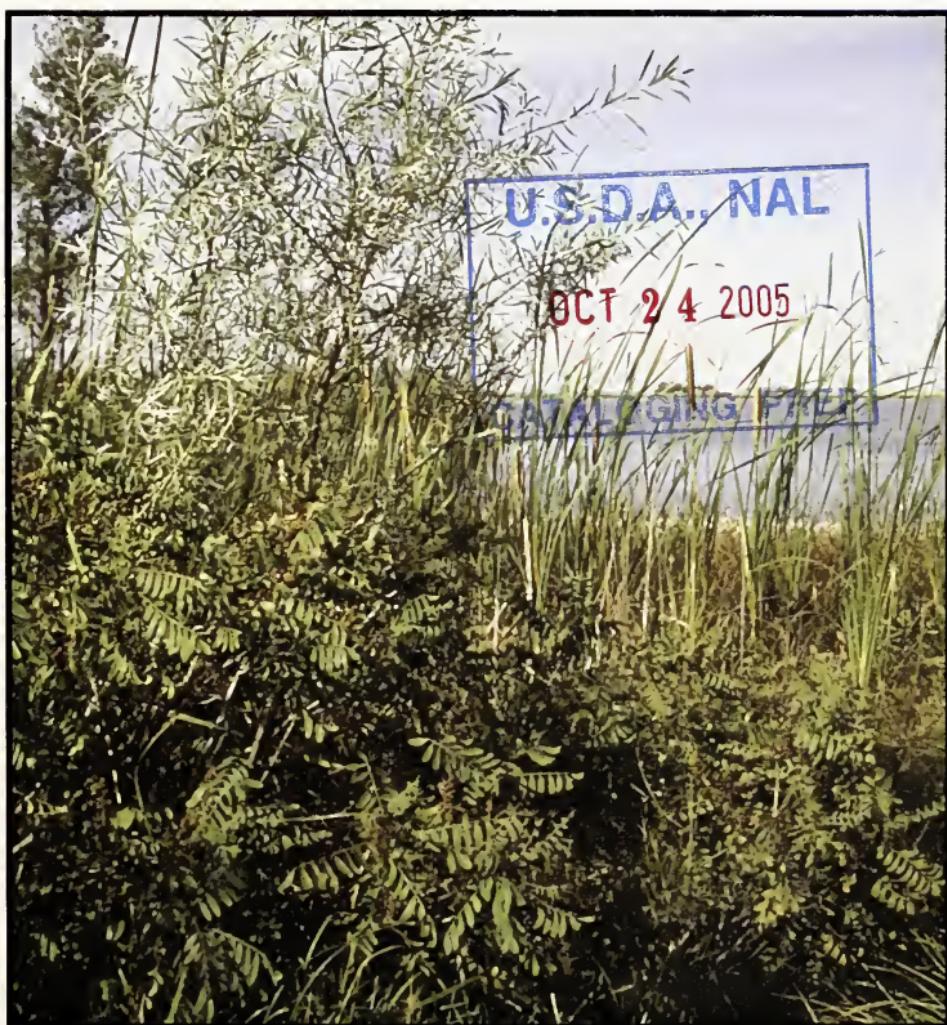


United States Department of Agriculture
Natural Resources Conservation Service
Plant Materials Center
Bismarck, North Dakota

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Survivor Germplasm False Indigo

and
Silver Sands
Germplasm
Sandbar
Willow



Native Shrubs
to Plant in
Riparian Areas
of the
Northern Great Plains
and
Upper Midwest
for
✓ Streambank
erosion control
✓ Lakeshore
stabilization
✓ Wildlife cover
✓ Windbreaks



Survivor

False Indigo (Natural Germplasm)

Description: Survivor Germplasm false indigo (*Amorpha fruticosa* L.) is a tested class germplasm release for use in riparian plantings for streambank erosion control, lakeshore stabilization, and wildlife cover. It has also performed well in windbreak plantings. False indigo is a native, late-season leguminous shrub frequent to locally common on moist streambanks, and along lake and pond shores. It is broadly adapted to well drained sites from rich, organic soils to infertile, dry and sandy soil. Mature plant height varies from 3 to 10 feet in northern climates. The scented flowers are purplish blue with orange anthers, and occur in 3 to 6-inch long, upright spikes in late summer.



False indigo is a native legume adapted to partial shade.

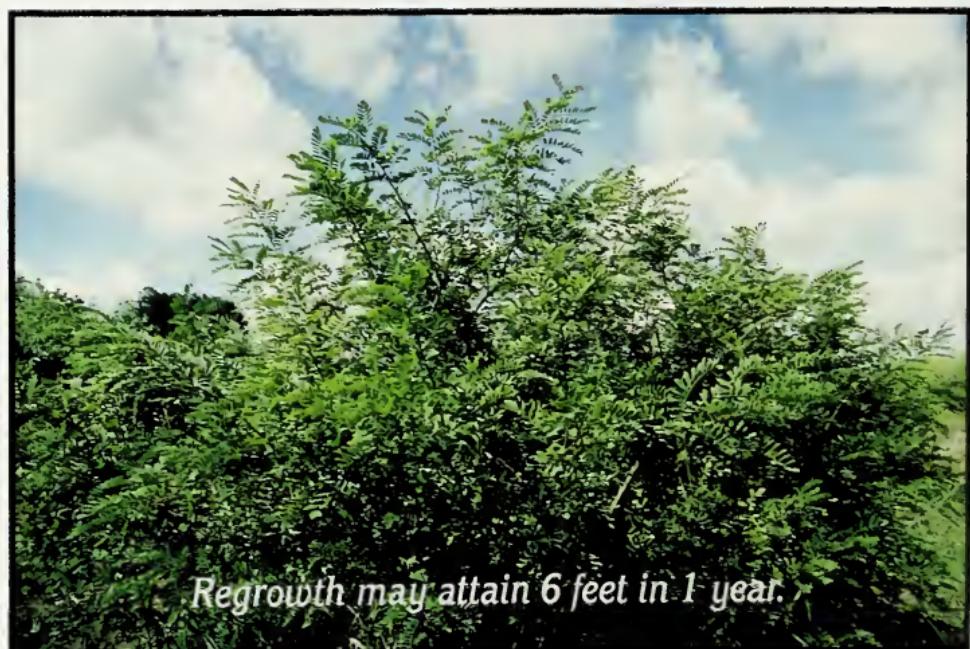
The fruits are short, glandular legumes containing a single smooth brownish seed. The leaves are alternate, pinnately compound, 4 to 8 inches long, with 15 to 25 leaflets, ovate to oblong. The bright green foliage is attractive and the finely divided compound leaves add a soft texture to the plant. Wildlife utilize the foliage and seeds. It is consumed by livestock and occasionally browsed by deer. False indigo is long-lived on adapted sites and regenerates from seed or branch layering. The fibrous root system is extensive and does an excellent job of stabilizing sandy soils. It is a nitrogen-fixer and can help improve infertile soils. Natural die-back due to age or environmental conditions is normal, and plants generally regenerate from the base. Bareroot

seedlings received from nurseries in the spring are usually completely dormant and after planting will leaf out later than most other shrub species. The leaves generally freeze on the plants in the fall.



Height varies from 3 to 10 feet.

Evaluation and Performance: False indigo is native to the Northern Great Plains and Midwest. Survivor originated from seed collected in Idaho. Thirteen field planting evaluations were established in Minnesota, North Dakota, and South Dakota from 1994 through 1996. The average survival was 70 percent. This is considered good, as a majority of the plantings were non-traditional type evaluations such as streambank stabilization or critical area plantings with a high occurrence of washouts and heavy weed competition from smooth bromegrass sod. Plants had an average growth rate of 1.4 ft/yr in height and 0.6 ft/yr in canopy cover. A clipping/regrowth study at the Central Lakes Agricultural Center near Staples, Minnesota, in 2002, showed that plants clipped near ground level grew back to within 84 percent of the height of the unclipped plants (5.5 ft) in one growing season. Survivor



Regrowth may attain 6 feet in 1 year.

Germplasm has performed well despite perennial weed competition such as smooth bromegrass, and has the ability to recover and regrow following injury from drought related die-back, flooding, and animal damage such as girdling by voles.



Ecological Considerations: Survivor Germplasm is a tested genotype of naturally occurring false indigo and has had no intentional genetic manipulation. It does not differ significantly in rate of spread or seed production from naturally occurring false indigo. Survivor Germplasm was documented as "OK to Release" when rated through the worksheet for "Environmental Evaluation of Plant Material Releases."

Potential Area of Adaptation: This selection has performed well in extensive test plantings on a variety of sites in North Dakota, South Dakota, and Minnesota. It is anticipated to be broadly adapted on soils/sites recommended for the species (USDA NRCS Field Office Technical Guide) across the regions of the Upper Midwest and Northern Great Plains.

Availability of Plant Materials: Small quantities of Generation 2 (G2) seed will be available from the Bismarck Plant Materials Center to establish seed orchards of the Survivor Germplasm. Conservation nurseries in the region sell seed and bareroot seedlings.

Release Cooperators

*USDA Natural Resources Conservation Service
Central Lakes Agricultural Center
Minnesota Agricultural Experiment Station
North Dakota Agricultural Experiment Station
South Dakota Agricultural Experiment Station*

Silver Sands

Sandbar Willow

(Natural Germplasm)

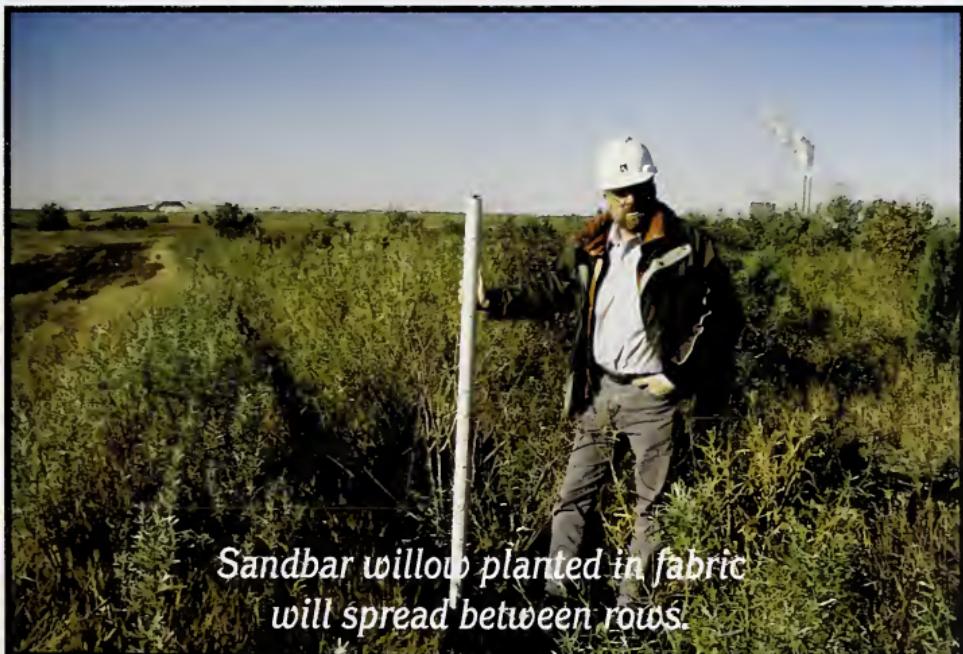
Description: Silver Sands Germplasm sandbar willow (*Salix interior* Rowlee) is a tested class germplasm released for use in riparian area plantings for purposes such as streambank erosion control, lakeshore stabilization, and wildlife habitat. This selection should also be given high consideration in windbreak or wildlife plantings on less droughty sites, or plantings with weed barrier fabric. The name Silver Sands was first used by Bill Smith at Smith Nursery in Charles City, Iowa, who collected the original material near the nursery. It was called Silver Sands because of the silvery-blue leaves.

Sandbar willow is a native, strongly spreading shrub species with a preference for wet sites in riparian zones such as alluvial bottoms and streambanks. It forms thickets that can become quite dense. Height varies from 3 to 15 feet depending on site conditions. The 2 to 5-inch long narrow leaves are serrated and vary in color from silver gray to light blue. Catkins appear after the leaves in the spring. The species is dioecious, so male and female flowers are produced by separate plants. All material tested appeared to be male clones and no seed was observed. Sandbar willow is susceptible to twig cankers, tar spot, aphids, willow galls, and scale insects. It is resilient to flood waters, sediment deposition, and pruning from wildlife. Plantings have been known to survive two months of continuous inundation. Fall color is often an attractive yellow gold.



Height varies from 3 to 15 feet.

Evaluation and Plant Performance: Sandbar willow is native to the Northern Great Plains and Midwest. Advanced testing included 25 field planting evaluations in Minnesota, North Dakota, and South Dakota from 1992 through 1998. Survival averaged 69 percent. This is considered good, as most of the plantings were non-traditional type evaluations such as streambank stabilization or critical area plantings with a high occurrence of washed out areas and heavy weed competition. The average annual growth rate was 1.4 ft/yr, and the average annual crown spread was 0.7 ft/yr. Partial winter die-back, typical of the species, occurred at several sites. New plants did regenerate from adjacent root suckers. It was noted that this species did not compete very well with perennial weeds, and growth rates were greatly reduced, especially in sod conditions. The Silver Sands Germplasm has a strong suckering habit that provided excellent soil stabilization and wildlife habitat, especially on wetter sites. This release also performed well in windbreak plantings with good weed control. However, in dry years, there was branch die-back. Attractive spring and fall colors were rated high in aesthetic appeal.



Ecological Considerations: Silver Sands Germplasm is a tested genotype of naturally occurring sandbar willow and has had no intentional genetic manipulation. It does not differ significantly in rate of spread from naturally occurring sandbar willow. Seed production has not been observed. Rhizome spread can be locally invasive, especially with tillage or clean weed control (lack of competition). Spreading off-site has not been observed on any of the test

plantings. Silver Sands Germplasm was documented as “OK to Release” when rated through the worksheet for “Environmental Evaluation of Plant Material Releases.”



Leaves often turn yellow gold in the fall.

Anticipated Conservation Use: The primary conservation use of Silver Sands Germplasm sandbar willow is in combination with other native riparian species for streambank erosion control, lake shore stabilization, and wildlife habitat. It also performs well in windbreaks on better moisture sites with good weed control.

Potential Area of Adaptation: This selection has performed well in extensive test plantings on a variety of sites in North Dakota, South Dakota, and Minnesota. It is anticipated to be broadly adapted on soils/sites recommended for the species (USDA NRCS Field Office Technical Guide) across the regions of the Upper Midwest and Northern Great Plains.

Availability of Plant Materials: Rooted cuttings of the original material, Generation 1 (G1), will be available from the Bismarck Plant Materials Center to establish propagation beds of the Silver Sands Germplasm. Conservation nurseries in the region sell rooted cuttings.

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